

# 2017 LEGISLATIVE UPDATE: FIRST SOUND

South Carolina's Success in Newborn Hearing Screening



## What is First Sound?

For over 15 years, South Carolina's legislatively mandated **Early Hearing Detection and Intervention (EHDI)** program **First Sound** has been connecting families raising infants with congenital hearing loss with early intervention services and support. The goal of First Sound is to not only enable infants to succeed in life but also coordinate with South Carolina's hospitals to emphasize timely and effective newborn hearing screening. Currently, all infants born in South Carolina's 46 delivering hospitals are screened.

Through early identification, the program enables families to have access to services during the critical window of a child's language development. When successful, opportunities for a child's academic success can be realized, improving the quality of life for deaf and hard of hearing children. Preparing deaf and hard of hearing children for academic achievement maximizes their development skills and translates into long-term savings in special education expenses and public assistance<sup>1</sup> in adulthood.

South Carolina's First Sound program uses the 1-3-6 targets: Infants screened by **1 month**, confirmed by **3 months** and beginning early intervention by **6 months**.

## First Sound is Improving Standards with Quality Improvement Initiative:

- First Sound is engaging SC hospitals in a quality improvement project to improve infant hearing screening practices and reduce rates of infants not rescreened (i.e. "lost to follow up").
  - To date, a total of 24 hospitals (eight per cohort) have completed the quality improvement project
  - A fourth cohort of 12 hospitals began the project October 1, 2017
- The following outcomes are the focus of the quality improvement project:
  1. Maintain a 95% or better screening rate (American Academy of Pediatrics (AAP) guidelines)
  2. Maintain a 4% or less annual referral rate for non-NICU babies (AAP benchmark to assure testing quality)
  3. Achieve 95% of all non-NICU newborn hearing screening results reported within 7 days of access to the record in the First Sound data system
  4. Achieve 30% or lower no show rates to follow up appointment with audiologist made prior to discharge for babies who did not pass the inpatient screening

## First Sound Highlights

- Approximately **52,507** infants were screened for hearing loss prior to hospital discharge in SC in 2016.
- At 97.5%, our First Sound Program **surpasses the American Academy of Pediatrics (AAP) benchmark goal** of 95% of newborns screened annually.
- The First Sound data system has been described as **"very impressive" by the Centers for Disease Control and Prevention** and is a leader in successful database integration with Vital Records.



*"Thanks to the newborn hearing screening, Annabelle was diagnosed as being profoundly deaf by 1 month of age. We were then referred to BabyNet and Beginnings of SC and we were able to get the services and information that we needed to ensure that we could plan for her future. Annabelle was bilaterally implanted with cochlear implants at 10 months of age and at 22 months old her language development is currently at the level of an 18-month old, despite only being able to hear for the past 12 months. The first three years of a child's life are the most crucial for language development and we're so thankful for Annabelle's early diagnosis!"*

**Megan Goodbar, parent of Annabelle—York County**

<sup>1</sup> "When deaf children are not identified early and given appropriate services, additional special education services beyond what would have otherwise been required can cost an additional \$500,000 for the local school district."

Johnson JL, Mauk GW, Takekawa KM, Simon PR, Sia CCJ, Blackwell PM. Implementing a statewide system of services for infants and toddlers with hearing disabilities. *Seminars in Hearing*. 1993;14:105-119.

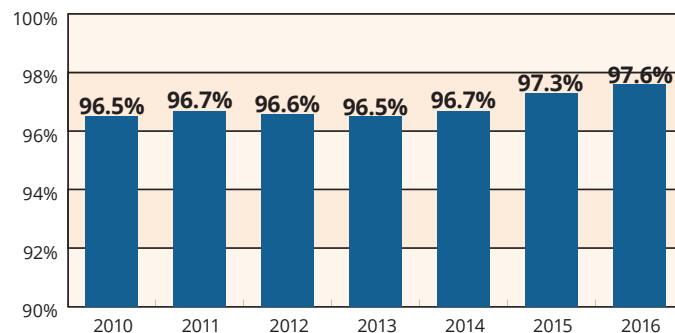
## First Sound is Working

- Since the initiation of our program, **1,333** infants have been identified with confirmed hearing loss and have received intervention.
- Hospitals have internally identified best practices to ensure all infants are properly screened.
- Positive Impact on Outcomes to Date:
  - 7.14% reduction in lost to follow up rate
  - 24% increase in timely reporting of screening results
- First Sound will continue to enhance quality improvement program methodology based on insights from key stakeholders, best practices identified by professional groups and pending continued federal funding from Health Resources and Services Administration (HRSA).

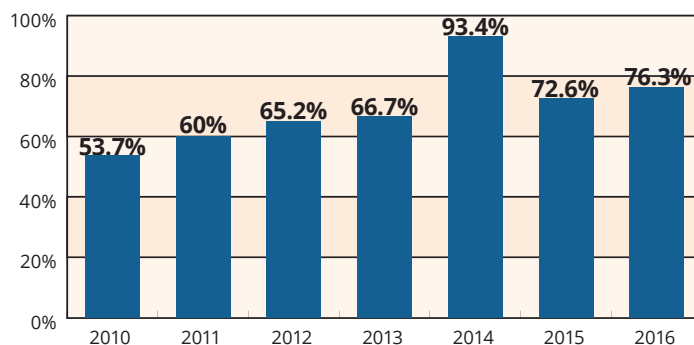
## First Sound is Researching

- First Sound collaborated with the University of South Carolina's Rural Health Research Center on a grant project through the Association of Maternal Child Health Programs (AMCHP) from 2015-2016 to study return on investment and the impact of various social determinants of health on timely intervention. The report was published in The Journal of Early Hearing Detection and Intervention, Vol. 2, Issue 1, May 2017. The article can be found at <https://digitalcommons.usu.edu/jehdi/vol2/iss1/5/>.
- The following conclusions were revealed regarding the impact of social determinants of health:
  - Infants were **less likely** to receive **timely diagnostic** services with the presence of the following factors:
    - Low or very low birth weight
    - Non-white mothers
    - Mothers had less than a high school education
  - Infants were **less likely** to receive **diagnostic** services in **any timeframe** with the presence of the following factors:
    - Low or very low birth weight
    - Non-white mothers
    - Mothers had less than a high school education
    - Reside in rural area
  - Infants were **more likely** to receive timely **early intervention** services with the presence of the following factors:
    - Severe or profound hearing loss
    - Mothers 26 years old or older
  - Infants were **more likely** to receive **early intervention** services in **any timeframe** with the presence of the following factors:
    - Low or very low birth weight
    - Severe or profound hearing loss

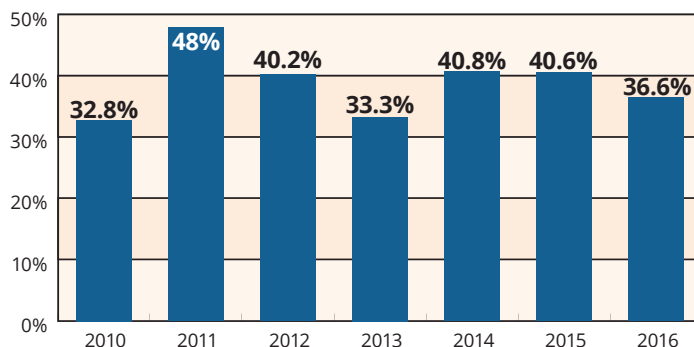
## Screening success rate:



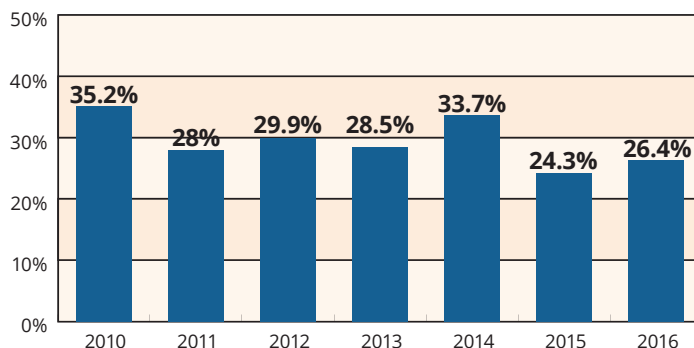
## Confirmed Hearing Loss by 3 Months:



## Early Intervention by 6 Months:



## Lost to Follow Up/Documentation:



## Contact Information:

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